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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,945	03/16/2001	Toshiaki Katsuma	KAW-247-USAP	5294
28892	7590	09/15/2004	EXAMINER	
SNIDER & ASSOCIATES P. O. BOX 27613 WASHINGTON, DC 20038-7613			PATEL, GAUTAM	
			ART UNIT	PAPER NUMBER
			2655	

DATE MAILED: 09/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/808,945	<b>Applicant(s)</b> KATSUMA, TOSHIAKI	
	<b>Examiner</b> Gautam R. Patel	<b>Art Unit</b> 2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5-8 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-2 and 4-8 are pending for the examination.

### **RCE STATUS**

2. The request filed on 6-18-04 for Request for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application is acceptable and a RCE has been established. An action on the RCE follows.

### ***Double Patenting***

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,545,821. Although the conflicting claims are not identical, they are not patentably distinct from each other because one of ordinary skill in the art would have realized that eliminating a step or an element and its function are not patentable if the function of the step is not desired as shown in *Ex parte Wu*, 10 USPQ 2031 (Bd. Pat. App. & Inter. 1989). See also *In re Larson*, 340 F.2d 965, 144 USPQ 347 (CCPA 1965); and *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975). Positive refractive lens or an objective lens is needed and inherently present for the system of these kind for the systems of these kind so additional limitation is not needed for the system to function exactly as claimed in the patent.

As to claims 2 and 4-8, since they are also fully disclosed in the patent number 6,545,821; they are therefore considered rejected as non-statutory double patenting as set forth in the paragraphs here in above.

### **Claim Rejections - 35 U.S.C. § 103**

4. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 and 5-8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nomura et al., US. patent 6,342,976 (hereafter Nomura). in view of Shiono et al., US. patent 5,742,433 (hereafter Shiono).

As to claim 1, Nomura discloses the invention as claimed [see Figs. 1-4] including A diffraction type lens, comprising:

A diffraction type lens [fig. 1, unit 5], disposed in a luminous flux, having a wavelength selectivity;

said lens having positive refractive power being constituted by a substrate having one surface [fig. 2, region 12] formed with a zone plate exhibiting a smaller converging action with respect to a wavelength X1 [635 nm] of light and a greater converging action with respect to a wavelength X2 [780 nm] of light, and the other surface [fig. 2, region 11] formed with a zone plate exhibiting a smaller converging action with respect to said wavelength X2 of light and a greater converging action with respect to said wavelength X1 of light, said substrate being transparent to said wavelengths X1 and X2 of light, wherein each of said zone comprises concentric gratings each having a rectangular cross section [see figs. 4] [col. 3, lines 46-65 and col. 4 line 56 to col. 5, line 59].

Nomura discloses all of the above elements, including two zone plates having two surfaces and one of them having a rectangular cross section [fig. 4, grating 12A]. Nomura does not specifically disclose that both zone plates comprise concentric gratings each having a rectangular cross section to the extent claimed.

However, concentric gratings [with rectangular cross section] are well known in the art for a long time [e.g., see Mino et al.; US patent 3,756,695]. It is well known in the art that most gratings are selected according to the system requirements and their shape is chosen accordingly. And desired beam shape can be obtained by combining concentric grating patterns, and light beam may be deformed into an arbitrary beam [even triangular shape]. Also Shiono clearly discloses:

A grating device [optical device 10, fig. 6] with two zone plate [fig. 6; 4A and 4B] comprises concentric gratings having a rectangular cross section [col. 5, line 35 to col. 6, line 13].

Both Nomura and Shiono are interested in improving the optical system and providing best diffraction grating suitable for particular system and forming desired beam shapes as needed. Both disclose use of gratings and rectangular shaped concentric gratings.

One of ordinary skill in the art at the time of invention would have realized that ease of fabrication in manufacturing the gratings is good function to have especially for mass production.

Therefore, it would have been obvious to have used dual surface concentric gratings in the system of Nomura as taught by Shiono because one would be motivated to reduce cost of fabrication even with small grating period and also convert light flux with high efficiency thus saving money in the manufacturing cost [col. 3, lines 51-58; Shiono].

NOTE: Even though Shiono has shown [fig. 6] single surface with rectangular cross section, Shiono clearly discloses that both surfaces [top and bottom] can be provided with plurality of gratings [col. 6, lines 6-13].

5. As to claim 2, Shiono discloses:

said diffraction type lens is shaped like a parallel plate [fig. 6, 4A and 4B] [col. 5, line 35 to col. 6, line 13].

6. As to claim 5, Shiono discloses:

Said luminous flux incident on the lens is substantially parallel [fig. 1, and col. 3, lines 46-65].

7. As to claim 6, Shiono discloses:

luminous flux is converged at a position where two kinds of optical recording media having thickness values different from each other are disposed, said wavelength X1 of light being used for recording or reproducing one optical recording medium [DVD], said wavelength X2 of light being used for recording or reproducing the other optical recording medium [CD] [col. 3, lines 46-65 and col. 4 line 56 to col. 5, line 59].

8. As to claim 7, Shiono discloses:

Luminous flux irradiated on a recording surface from said lens and received from said recording surface have optical paths which are in substantial agreement [col. 3, lines 46-65 and col. 4 line 56 to col. 5, line 59].

9. As to claim 8, Shiono discloses:

When a luminous flux is irradiated on said lens, the lens is driven for focusing [col. 3, lines 46-65 and col. 4 line 56 to col. 5, line 59].

10. Applicant's arguments with respect to claims xc have been considered but are moot in view of the new grounds of rejection.

#### ***Allowable Subject Matter***

11. Claim 4 is objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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NOTE: Claim 4 is allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a diffraction type lens which includes "one surface formed with height h1 and second with height h2 which satisfying four equations as disclosed in claim 4 and values of K1 and K2 are between 0.65 to 1.35". It is noted that the closest prior art, Nomura & Shiono shows a similar apparatus which has dual light sources with two different wavelengths and also computes the surface of the lens based on height [thickness] and refractive index and also clearly indicates relationship of two wavelengths and refractive index. Also Nomura & Shiono shows relationship between depth [or height], wavelength and refractive. However Nomura and Shiono fails to disclose details of the equations used in these calculations in specific manner as claimed in claim 4, especially limits constants K1 and K2.

#### Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is (703) 308-7940. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

The appropriate fax number for the organization (Group 2650) where this application or proceeding is assigned is (703) 872-9314.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To can be reached on (703) 305-4827.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-4700 or the group Customer Service section whose telephone number is (703) 306-0377.



**GAUTAM R. PATEL**  
**PRIMARY EXAMINER**

Gautam R. Patel  
Primary Examiner  
Group Art Unit 2655

September 9, 2004